

	Type	L #	Hits	Search Text	DBs	Time Stamp
1	BRS	L1	371859	(liquid near crystal) or lcd	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 07:50
2	BRS	L2	270561 8	light or laser	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 07:48
3	BRS	L3	129654 5	reflect\$4 or mirror\$2	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 07:48
4	BRS	L4	72751	1 and 2 and 3	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 07:49
5	BRS	L5	435089 0	support or base	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 07:50

	Type	L #	Hits	Search Text	DBs	Time Stamp
6	BRS	L6	27052	4 and 5	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 07:50
7	BRS	L7	333	((((liquid near crystal) or lcd) near3 (close\$2 or next or abut)) near4 light)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:13
8	BRS	L8	99	6 and 7	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:08
9	BRS	L9	13320	dmd or mems or (micro near (mirror oe display))	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:12
10	BRS	L10	14	2 and 3 and 7 and 9	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:10

	Type	L #	Hits	Search Text	DBs	Time Stamp
11	BRS	L11	6914	2 and 3 and 9	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:11
12	BRS	L12	13320	dmd or mems or (micro near (mirror or display))	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:12
13	BRS	L13	17	((dmd or mems or (micro near (mirror or display))) near3 (close\$2 or next or abut)) near4 light)	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:32
14	BRS	L14	988795	reflect\$3	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:33
15	BRS	L15	5811	11 and 14	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:34

	Type	L #	Hits	Search Text	DBs	Time Stamp
16	BRS	L16	159392 5	substrate	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:34
17	BRS	L17	3364	15 and 16	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:35
18	BRS	L18	320456 3	image or display	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:36
19	BRS	L19	2167	17 and 18	USPAT; US-PGP UB; EPO; JPO; DERWEN T; IBM_TD B	2003/11/05 08:38



US005442411A

United States Patent [19][11] **Patent Number:** **5,442,411****Urbanus et al.**[45] **Date of Patent:** **Aug. 15, 1995**[54] **DISPLAYING VIDEO DATA ON A SPATIAL LIGHT MODULATOR WITH LINE DOUBLING**[75] **Inventors:** Paul M. Urbanus; Vishal Markandey, both of Dallas; Robert J. Gove, Plano, all of Tex.[73] **Assignee:** Texas Instruments Incorporated, Dallas, Tex.[21] **Appl. No.:** 176,618[22] **Filed:** Jan. 3, 1994[51] **Int. Cl.⁶** H04N 5/74[52] **U.S. Cl.** 348/771; 348/759; 348/448; 345/84[58] **Field of Search** 348/771, 770, 759, 761, 348/448; 345/84, 85; H04N 5/74[56] **References Cited****U.S. PATENT DOCUMENTS**

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reprinted from *IEEE Transactions on Consumer Electronics*, vol. CE-29, No. 3, Aug., 1983, pp. 237-241.S. Naimpally, et al., "Integrated Digital IDTV Receiver with Features," *IEEE Transactions on Consumer Electronics*, vol. 34, No. 3, Aug., 1988, pp. 410-419.*Primary Examiner*—James J. Groody*Assistant Examiner*—Chris Grant*Attorney, Agent, or Firm*—Julie L. Reed; Richard L. Donaldson; Rene E. Grossman[57] **ABSTRACT**

An SLM-based video receiver (10) receives a video input on a field-by-field basis at a signal interface unit (11) and passes the input to a processor (12). The processor (12) performs analog-to-digital conversion if the pixel data is analog and also performs other enhancements to prepare the pixel data for loading into a video memory (14). Pixel data from the processor (12), representing a field of pixel data, is stored into the memory (14) for loading into rows of pixel elements of a spatial light modulator (16). The spatial light modulator (16) receives the pixel data in rows. The addressing functions of the spatial light modulator (16) are used to generate additional display rows of pixel data per field. Thus, the SLM-based video receiver (10) displays a video frame having more lines than the field of pixel data.

20 Claims, 2 Drawing Sheets